from which

If the thickness of the crest of the inverted weir exceeds 1 m, the resistance to the flow of the gas will be increased and it will be necessary to increase the value of *h.* On the contrary, if the thickness of the crest and the roughness of the wall surface are diminished, the coefficient in the last formula will become less, and its minimum value corresponding to M = 1 will, as it is easy to see, be equal to or very close to 3.05.

The preceding formulas have been established upon the supposition that the gas arriving at the bridge wall has a horizontal velocity equal to zero. But it follows from these considerations that, in the case where the horizontal velocity is not a negligible factor (Fig. 132) the form of the formula does not change.

FIG. 122.

In these cases it is evidently necessary to increase the value of

$$\frac{v^2}{2g}$$

the coefficient *H* to H-0.55—, conforming to^Bazin's formula,

p being the depth or thickness of the flowing current of gas before it reaches the sill or weir, and being equal to the height of the stream over the weir plus the value of *H.* When this last value is known, it becomes possible to introduce into the formula a correction for each particular case, as well as in the preceding computations.

It will be seen in the numerical examples examined that - the relation between the thickness or depth of the gaseous stream which flows through the opening over the bridge or its depth below the inverted weir, the volume of gas per second *Q* and the length of

the crest of the weir at right angles to the direction of flow B, is finally given by the equation: